

Remarks

Claims 1 - 10 are pending, claims 8 - 10 being newly added here.

Claims 1 - 7 stand rejected under 35 USC 112, second paragraph, as being indefinite. The claims have been amended to obviate these rejections. However, with respect to the Examiner's first comment asserting that the terms "expansion times" and "compression times" are unclear, it is respectfully noted that these terms are, in fact, well understood in the field to be the times for the expansion stroke and compression stroke respectively. Indeed, exactly these terms are used in the Denz patent (see column 1, lines 66 - 68) on which the Examiner bases the prior art rejections (see below).

Claims 1 - 7 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 5,144,927 to Denz. These rejections are respectfully traversed for the following reasons.

The method of this invention is based on the measurements of expansion and compression times for (as recited in claim 1) at least one cylinder. Then, as per lines 10 - 25 of page 8 of the specification, these times are used to form a difference in compression times, as well as a difference in expansion times. Finally, *the difference between these two differences* is computed, which this invention uses as a sign of engine combustion misfire. This is what was set forth in the previous claim 1

before the examiner, and this is the method that is set forth still in claim 1 as amended.

The Denz patent (which, it is respectfully noted, was cited in the PCT search report (see attached) of a foreign counterpart to this application, as merely being an "A" reference. Moreover foreign counterpart European Patent - EP0927346B1, has been granted with Denz of record, teaches a test for engine misfires based on differences among expansion and compression times (see column 5, line 45 – column 6, line 10) that, simply put, are not the same as what is recited in claim 1. Specifically, Denz does not teach the steps of:

- a. measuring at least two successive compression times and expansion times for at least one cylinder;
- b. forming the difference between compression times for said at least one cylinder;
- c. forming the difference between expansion times for said at least one cylinder; and
- d. forming the *difference between the differences* calculated in steps b and c.

Hence, Denz fails as an anticipatory reference, and it is respectfully urged that the rejection is improper and should be withdrawn. If the rejection is maintained, the Examiner is respectfully asked to point with specificity to those lines in Denz teaching each of the individual method steps set forth in the claims.

Newly added claim 9 sets forth this method to be carried out on two cylinders, with a first cylinder providing a first compression time and a first expansion time, and then a second cylinder providing a second compression time and a second expansion time for the calculation. A difference in compression times between the two cylinders is calculated, as is a difference in expansion times between the two cylinders. Then the difference between these two specific differences is calculated. Denz is not seen to teach this method.

Newly added claim 10 is directed to the other variant of this calculation (lines 21 – 24 of page 8 of the specification), in which a *ratio* of these aforementioned differences is used to signal combustion misfire. Again, Denz does not teach a method employing such a ratio anywhere in his patent.

For at least the aforementioned reasons, the Applicant respectfully believes that the rejections are improper and should not be maintained. It is respectfully submitted that the application is in condition for allowance and such action is respectfully requested.

FEES

No fee is believed to be due. If, on the other hand, it is determined that further fees are necessary or any overpayment has been made, the Commissioner is hereby authorized to debit or credit such sum to Deposit Account No. 02-2275.

Pursuant to 37 CFR 1.136(a)(3), please treat this and any concurrent or future reply in this application that requires a petition for an extension of time for its timely submission as incorporating a petition for extension of time for the appropriate length of time. The fee associated therewith is to be charged to the above-mentioned deposit account.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

LUCAS & MERCANTI, LLP

By:


Michael N. Mercanti 33,966
Attorney for Applicant(s)
475 Park Avenue South, 15th Floor
New York, NY 10016
Tel. # 212-661-8000

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LUCAS & MERCANTI, LLP

BY:


Carla Curado